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"Why, why not? I hope there was nothing particular in the letter. I thought"—

"Oh, you odious blundering wretch!" she exclaimed, interrupting him, and bursting into tears; "it was nothing but an innocent, harmless valentine; and now look at all the mischief you have put into it."

It was with a sorrowing heart that Charley wended his way homeward that evening, after enduring such a mortifying discovery, and the disagreeable consequences entailed thereon, and putting in extreme jeopardy his chance of the incensed Lucy, and her very desirable three thousand appurtenances; but as he passed the little inn where temporary sojourners in B—— were made as comfortable as the nature of the circumstances would permit, he caught a glimpse of the figure of a man standing in the hall, closely muffled and enveloped in that most successful of all disguises which a gentleman can assume, a rough pee-jacket. Could it be? it was decidedly like him; but what could bring him there? Nay, by Jove! it was the identical Mr Edward Fitzgerald himself, arrived, most unaccountably, at the very nick of time, to explain to Lucy how inadvertently her name had been alluded to, and thus get him out of the scrape. Led by this gleam of hope, he hurried up to the stranger, and eagerly claimed his recognition by seizing his hand without ceremony, and welcoming him to B——.

"Down about business, I presume?" quoth Charley.

"No—yes—exactly," stammered the surprised new-come.

"Egad, you can do my business at all events," continued Charley. "I suppose you know by this time what a cursed mistake I made the other day about Miss Bindon's letter. Oh, you may laugh; but faith it has been no laughing matter to me. However, you can set all to rights, if you choose, by writing a few lines, saying how it occurred, and that it was quite an accident, and all that. Do now, like a good fellow, and I'll just run back with it, and make my peace."

"You mean," observed Fitzgerald, "that I should write to Miss Bindon. My dear fellow, I shall be delighted; but of course you'll deliver it under the rose. It wouldn't be the thing, you know, to let the old lady into the secret;" and laughing heartily, and displaying the most laudable alacrity to extricate Charley from his dilemma, he led the way into the parlour, and having procured writing materials, sat down, wrote a few hurried lines, which he said would fully explain the whole occurrence and set it in a proper light, sealed his note, and delivered it to the anxious swain for whose behoof he had penned it, and who hastened away with his prize so quickly, that before the ink was dry, he placed it in the reluctant hands of the still pouting Lucy. "There!" exclaimed he, triumphantly; "since you won't believe me, maybe you'll believe that. Now, pray don't throw it into the fire," continued he, as a very unambiguous motion of the young lady seemed to imply was her intention; "only read it, and if that don't satisfy you, I'll say you're hard to be pleased, and that's all."

Moved by this powerful appeal, Lucy cast her eye on the billet; a strange sort of emotion passed across her face, and she abruptly broke the seal, and proceeded to peruse the contents, while Charley applied himself, with equal zeal, to the perusal of her countenance. In it he could read, first, surprise, extreme and undisguised; secondly, confusion; and lastly, something undefinable, which at all events was not displeasure, for she concluded by looking fixedly at him for a moment or two, and then yielding to a most unladylike fit of laughter.

"Well, Lucy, is all right?" asked Charley, delighted at this demonstration.

"All, all," she responded. "Why, Charley, you must be canonized for your punctuality in the delivery of letters. But remember, not a word to mamma—mum, Charley. And now be off, lest she should come down, and ask what brought you back."

"But, Lucy," interrupted the ardent lover, "now that's all settled, I think you might"—

"Well, here—take it—anything to get rid of you."

"Oh, Lucy! Lucy!"

Next morning terrible was the hubbub in the household of Mrs Bindon. Miss Lucy was nowhere to be had; in fact, had eloped with a gentleman who had arrived at the inn the evening before, though by what means she could have communicated with him, or he with her, must, as the story-books say, for ever remain a mystery, unless we are to suppose the gentleman had the audacity to make Charley the bearer of his

proposals in his exculpatory letter; at least, one to the following purport was found in her room next morning:—

"Dearest Lucy—So you have not forgotten me! It is needless to say I know you to be the writer of the sweet valentine I received last week. It has awakened new hopes in me—hopes that I have ventured here to put to the test. In a word, will you be mine?—if so, we have nothing to hope from your mother. We must elope this night, and I shall accordingly have a carriage in readiness near your door until morning. Pray excuse the bearer all his mistakes, and this last particularly.—Ever your own
E. F."

The dowager recognised the initials, but all the rest was heathen Greek to her. "Oh, Lucy! Lucy!" she exclaimed, in the bitterness of her grief, "did I ever think I was rearing you up to see you make a man of the house, at last, out of an attorney's skip!"
A. M'C.

WHY DO ROOTS GROW DOWNWARDS, AND STEMS TOWARDS THE HEAVENS?

FIRST ARTICLE.

IT cannot have escaped the observation of the most inattentive, the tendencies which roots have generally to descend into the ground, and which stems have as commonly to grow upwards towards the sky; yet the very commonness of these things may have prevented their obtaining the attention that they merit; for it must be acknowledged, that to a mind directed to them they appear, however frequent their occurrence, not the less difficult to explain. It is sufficiently hard to comprehend why roots and stems should grow in different directions, the one downwards, and the other upwards; but when we add to these the constant manner in which the darker surface of a leaf is turned upwards, and the part of a flower painted with the most gorgeous colours is directed always towards the light, the subject becomes more interesting, and the more vexatious ought to be our ignorance: and, then, there are phenomena, produced by unusual circumstances, calculated to puzzle us still further, and increase our bewilderment. Such are the manner in which a geranium, growing at a window, bends its stems and leaves towards the glass; the manner in which a potato plant, growing in a cellar into which the light is admitted by a single chink, will acquire a most unusual height, and follow a most devious and uncommon track to reach that ray of which it appears enamoured; and the mode in which a root will descend, along the face of a bare rock, an extraordinary distance, in order to arrive at some spring or stream. These are objects well worthy of contemplation. A remarkable example of one of the facts just alluded to occurred many years ago in the tower of an old cathedral in England: a potato plant grew to the height of between thirty and forty feet, to get at the glimmering light of a partially closed window.

The final causes of many of these facts are easy to comprehend: the reason why a root grows down into the earth, is for the purpose of obtaining that sustenance which is necessary for the growth of the plant of which it is a part; and stems grow upwards, and towards the light, because the influence of this element is necessary for the elaboration of the sap; as a result of which process, stems grow in thickness, roots in length, flowers are developed, and the proper juices of vegetables become formed. We are likewise not without the means of explaining the proximate cause of one of these phenomena, for we have shown in our articles on Vegetable Sap that it is by the ascending sap that stems grow in length, and that, when light is excluded, no other sap can be formed; this causes the ascending sap to accumulate under such circumstances, and, consequently, in the dark, stems may be expected to acquire an enormous and very disproportionate length: thus we are enabled to understand why the potato, in the instance mentioned, should grow to so great a height. But admitting this explanation, how much seems incomprehensible in these common and too frequently neglected phenomena! We shall endeavour, in this and the following articles, to explain the manner in which these curious things occur.

One might imagine that the reason why roots grow into the earth, and stems grow out of it, is on account of the former being attracted, and the latter repelled, by the materials of which that earth is composed; or, on the other hand, by the stems being attracted, and roots repelled, by

atmospheric air. But such cannot be the case; for if seeds be made to germinate in the lower stratum of earth placed in a box furnished with holes in the bottom, the roots will descend into the air through those holes, while the stems will ascend into the earth. In a similar manner, it might and has been thought that roots are attracted, and stems repelled, by the moisture of the earth; but a seed made to germinate between two moist sponges will protrude its root downwards, and its stem upwards, without reference to the liquid in its vicinity. This explanation is therefore equally inadmissible. There are some who explain these, as well as all other things occurring in living beings, by the mysterious principle of life; but we only admit the existence of this principle, because there are some phenomena incapable of being accounted for by the ordinary laws that rule the universe, and that are common to all matter; and it is therefore unphilosophical to ascribe any effects to its operation, until they are found to be inexplicable by those ordinary laws. But we shall find that the facts in question do not in a great measure belong to these exceptions.

The particular directions of stems and roots are produced by a combination of causes: if an onion plant, exposed to daylight, be laid horizontally on the ground, the extremities of the stem and roots will in the course of a few hours turn themselves in their natural directions, the one upwards, and the other downwards; if a similar plant be placed in a dark cellar, to which no light has access, the same things will take place; but that which happens in a few hours, in the one instance, will require as many days in the other; and thus we learn that in the production of these effects two causes operate: first, the light; and, secondly, some other principle distinct from light. It will occur to the reader that the absorption of water from the earth, by the most depending part of the plant, and its evaporation above, might, by swelling the lower portion and contracting the upper, produce the upward curving of the stem; to obviate this objection, the plant was placed in water, where no evaporation could occur, and absorption must take place equally over the whole surface; and still it was found that the same things happened.

Light, therefore, is most powerfully influential in producing the particular directions of the parts of plants; but there is another principle, distinct from light, which acts in effecting the same phenomena in a minor degree, but not the less absolutely and even more generally. Let our readers bear in mind the existence of this principle, which will form the subject of a future article. For the present, we will examine the manner in which light operates in promoting the directions of stems and roots.

We have before hinted that the tendency of the organs of vegetables towards the light, bears a direct relation to the depth and brilliancy of their colours; roots which are usually destitute of colouring matter grow away from the light; the upper surfaces of leaves are always the most deeply coloured; and in those erect leaves which are equally exposed to light, both surfaces are similarly coloured; if the outer surface of a flower be richly tinted, it is pendent; in erect flowers, on the contrary, the internal surface is always the most brilliantly painted; and in some cases the direction of the flower and fruit is different, connected with similar conditions. But in all these instances we have reason to believe that the organ is not directed towards the light, because it is highly coloured; but that it is highly coloured, because it is presented to the light. In plants growing in the dark, all the organs are colourless; it is only when exposed to the light that they acquire their various hues. Even the extremities of the roots have been found in a singular experiment of Dutrochet's to acquire a green colour by exposure to the influence of light.

Is this tendency of the coloured parts of plants to turn towards the light, due to an attraction exerted by this agent, or is it produced by a peculiarity of growth determined through its influence? A curious experiment has settled this question: A leaf, attached by its footstalk to a pivot, was so arranged that it could freely turn in every direction: under these circumstances, its under surface was exposed to light. If an attraction existed between the most deeply coloured portion and the light, the leaf might be expected to revolve on its pivot, in obedience to this attraction: but instead, the footstalk took on a spiral or corkscrew growth, by means of which the upper portion became in time presented to the light. Now, this experiment sufficiently showed that the manner in which light acts, is by its influence over vegetable growth.

But what is the influence of light over vegetable growth? We have already answered this question in our articles on

the Sap: we have found that when light is present, the sap becomes elaborated in the green parts of plants; and the use of this elaborated sap is, by developing vegetable fibre, to increase the thickness of stems, and the length of roots. While the ascending sap, by forming vegetable flesh, lengthens the stems, and makes the root thick, the directions of the different parts of plants, by the agency of light, must be in obedience to these functions.

We are now in a condition to comprehend the cause of some phenomena. A geranium (*Pelargonium*) stem, placed at a window, curves towards the light: this takes place, because the portion of stem nearest the window elaborates most sap: consequently, in this portion most vegetable fibre is formed. The portion away from the light, on the contrary, has most ascending sap, which forms fleshy tissue, and lengthens the stem; the half of the stem remote from the light is therefore longer, than the half nearest the light; the former is fleshy and elastic, the latter is rigid and fibrous. Need we be surprised, then, that the short, rigid, and fibrous portion should draw down the long, fleshy, and elastic part, and curve it towards the light?—it is but the bending of a bow, by the agency of its string.

But why do roots curve away from the light? Neither is this difficult to understand. Roots do not elaborate the sap, nor form vegetable fibre of their own: what vegetable fibre they contain is pushed down through them from the stem: more of this vegetable fibre will force its way downwards, from the part of the stem nearest the light, than from that which is most remote: two forces of unequal intensity will push downwards, through opposite portions of the root; the greater pressure may be expected to overcome the lesser, and in obedience to this, the root will curve away from the light.

We have now endeavoured to demonstrate the manner in which light operates in causing the directions of stems and roots: but it will be recollected that there is another principle, less powerful but more universal, which shares in the production of these effects. The consideration of this will form the subject of our next article. J. A.

CAROLAN THE HARPER.—Respecting the origin of Carolan's fine air of "Bumper Squire Jones," we have heard a different account from that given on O'Neill's authority. It was told us by our lamented friend, the late Dean of St Patrick's, as the tradition preserved in his family, and was to the following effect: Carolan and Baron Dawson, the grand or great grand-uncle of the dean, happened to be enjoying together, with others, the hospitalities of Squire Jones at Mooneyglass, and slept in rooms adjacent to each other. The bard, being called upon by the company to compose a song or tune in honour of their host, undertook to comply with their request, and on retiring to his apartment, took his harp with him, and under the inspiration of copious libations of his favourite liquor, not only produced the melody now known as "Bumper Squire Jones," but also very indifferent English words to it. While the bard was thus employed, however, the judge was not idle. Being possessed of a fine musical ear as well as of considerable poetical talents, he not only fixed the melody on his memory, but actually wrote the noble song now incorporated with it before he retired to rest. The result may be anticipated. At breakfast on the following morning, when Carolan sang and played his composition, Baron Dawson, to the astonishment of all present, and of the bard in particular, stoutly denied the claim of Carolan to the melody, charged him with audacious piracy, both musical and poetical, and, to prove the fact, sang the melody to his own words amidst the joyous shouts of approbation of all his hearers,—the enraged bard excepted, who vented his execrations on the judge in curses both loud and deep.—*Dublin University Magazine.*

The two most precious things on this side the grave are our reputation and our life. But it is to be lamented, that the most contemptible whisper may deprive us of the one, and the weakest weapon of the other. A wise man, therefore, will be more anxious to deserve a fair name than to possess it, and this will teach him so to live as not to be afraid to die.—*Colton.*

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